

## APATHETIC THYROIDISM

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WE HAVE from time to time in the past few years spoken and written of a seldom mentioned and often unappreciated type of hyperthyroidism which we have termed apathetic thyroidism, in contradistinction to the typical hyperthyroidism of the activation type. In a clinic such as ours, where so many patients with thyroid disease are seen, many patients with this type of the disease remain undiagnosed for such long periods of time and when diagnosed are underestimated as to their seriousness because of their lack of activation, that we believe that a discussion of the differences and dangers of the two types may well be of value.

The diagnosis of frank hyperthyroidism of the typical activation type, particularly in the youthful (Fig. 1) is by no means difficult. Likewise the very obvious seriousness of the activation symptoms which characterize it compels a respect for its dangerous possibilities. One cannot see a patient with flushed skin, rapid, pounding heart, full, bounding pulse, rapid, ceaseless movements, high nervous tension, impressive emotional outbursts, and hot, moist skin, all contradicted by marked myasthenia, without being impressed with (1) the certainty of the diagnosis, and (2) the possibility of a fatal outcome upon the addition of any further burden on the increased intensification of the already existent hyperthyroidism. So outstanding are the diagnostic indications and obvious danger signals of activated hyperthyroidism that its diagnosis is rarely overlooked or its seriousness underestimated.

All that is so positive in activated hyperthyroidism, however, is negative in apathetic or non-activated hyperthyroidism. Activated hyperthyroidism is not necessarily limited, but tends to be so, to the middle-aged and youthful. Apathetic thyroidism appears almost entirely in those patients of middle age and past middle age (Figs. 2 and 3). Patients with activation hyperthyroidism tend to have either well-marked exophthalmos or very obvious stare. Those with apathetic thyroidism tend to have no exophthalmos and little, if any, stare.

Patients with the usual type of hyperthyroidism—that is, the activated type—tend to have glands of greater than normal size, although exceptions may occur in either type, while patients with apathetic thyroidism tend to have small, firm glands without striking increase in size.

Patients with thyroidism of the activated type tend to have pulse rates which are high and of full, bounding character. Those with the apathetic type of thyroidism tend to have relatively low pulse rates, varying from 100 to 120, and not characteristically full and bounding in character.

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Patients with activated thyroidism show apex impulses which are thrusting and forceful in their type, while the apex beats in patients with apathetic thyroidism are not striking, distinctly not forceful, and obviously unimpressive in character.

The general motor activation of activated thyroidism is characterized by the rapidity of the motions and by the ceaselessness and wastefulness of their character. On the other hand, apathetic thyroidism is characterized by



FIG. 1.—Primary active hyperthyroidism. For purposes of comparison only, an activated type of thyroidism is presented. This is the exaggerated type of activation in a child of six with marked exophthalmos, with no weight loss, but with marked myasthenia; a history of hyperthyroidism of irregular course over a period of two years, a basal metabolism of plus sixty, a pulse rate of 128 to 132. A comparison of these two quite definitely different pictures of thyroidism will serve to illustrate how widely separated apathetic thyroidism is from that of the activated type.

very definite repose, reaching in many instances to a definite apathy which leads us to designate it by this term.

Activated thyroidism is characterized by a moist, hot, soft skin. Apathetic thyroidism, by a dry, firm, relatively cool skin.

Basal metabolism rates in activated hyperthyroidism are, as one would expect, usually proportionately high in relation to the degree of activation, +50 to +100, and over, while the basal metabolism in apathetic thyroidism is proportionately low in relation to the non-activation, as would be expected, +40 and downward to +20, and occasionally under.

Patients with activated hyperthyroidism tend to have had the disease shorter periods of time than do those with apathetic thyroidism, and those with the activated type of thyroidism acquire with it a certain indescribable youthfulness of appearance, while those with apathetic thyroidism have their appearance of agedness exaggerated until they seem unduly old for their actual years. This may be in some measure explained by the fact that the skin of patients with activated thyroidism tends not to be pigmented, but



FIG. 2.—Moderate apathetic thyroidism. This patient represents the moderately apathetic type of thyroidism with a quite typical history. She is forty-eight years of age. She has lost 85 pounds since 1915, her present weight being 88 pounds. She has complained of nervousness, weakness and palpitation since 1923. Her basal metabolism rate was plus thirty-nine. Her pulse rate during metabolism was 108 to 120. Her blood pressure was 130/80. Note that this patient in contradistinction to activation is in very definite repose. Note the absence of eye signs. Note the absence of any marked thyroid enlargement and note the senile appearance. It is to be noted also, as stated in the text, that the metabolism is not high and that the pulse rate is not high and that the weight loss has been progressive over a number of years.



FIG. 3.—Advanced apathetic type of hyperthyroidism. Goitre for twenty-five years. Weight loss of 52 pounds between 1925 and 1927. Metabolism plus thirty-six twelve days before operation; pulse 80-84; weight 105 pounds; blood pressure 150/0; auricular fibrillation and a large intrathoracic goitre. Note the lack of activation, definite apathy, dry and wrinkled skin.

possesses the live, warm, moist, pinkish flush which characterizes youth, as described above. The skin of patients with apathetic thyroidism, on the contrary, tends to be dry; cool, lifeless, and with the pigmentation which characterizes old age.

We have, unfortunately, had the opportunity to observe the behavior of individuals of both types during the onset of death following fatal reactions

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to surgical procedures. Patients with activated hyperthyroidism die in states of distinct over-activation; those with apathetic thyroidism die in states of distinct apathy progressing into coma.

A fatal reaction following a surgical procedure in thyroidism of the activated type is associated with tremendous activation in all of its forms: cardiac (tachycardia up to uncomfortable rates), respiratory (very rapid respirations), motor (requiring restraint) and mental (up to delirium).

Patients with serious and fatal reactions following partial thyroidectomy for apathetic thyroidism go back to their beds and either never awaken from their anæsthetic, or awaken only to sink comfortably, leisurely, without activation, into semi-stupor or to become completely unconscious and die gently with practically none of those awesome activation signs which accompany death with the typical activation thyroidism, as, for example, seen in a young girl with intense exophthalmic goitre.

It is not my purpose to attempt to create another group in thyroid classification. We have all so simplified the classification of thyroid disease in recent years that it is much better understood and hence much better treated, and I do not wish to further complicate it. I do desire, however, to attempt to establish in the minds of physicians the existence of an atypical thyroidism of this type so that they may not overlook it in diagnosis because of its lack of obviousness, and so that they may not underestimate its unobtrusive but definitely certain seriousness.

As relates to its diagnosis, all patients with unexplained weight loss, unexplained tachycardia, unexplained myasthenia, should be investigated by careful clinical investigation and careful metabolic studies as to the presence of a possible apathetic type of thyroidism, regardless of the absence of any of the typical signs of hyperthyroidism. If physicians will have this atypical apathetic type of thyroidism in mind, we feel sure from our own experience with them that patients whose abnormal states were hitherto not infrequently undiagnosed, will be diagnosed as cases of apathetic thyroidism, submitted to subtotal thyroidectomy, and so be restored to health and relatively normal capacity.

It must, of course, be realized that there exist all gradations between the extremely intense and severe types of activated hyperthyroidism—for example, in a young and active child up to the extreme, almost somnolent type of apathetic thyroidism in an aged person. Fortunately, however, the two types tend to remain, from the very character of their differentiating signs, quite clearly separated, making thus their recognition not difficult when one has in mind the existence of this type of apathetic atypical thyroidism and has had experience with it.

It is very necessary that surgeons who are operating upon patients with thyroidism of this atypical apathetic type should realize the great capacity of patients with this type of thyroidism to die unexpectedly, giving few or no warning signs as to the impending fatality in their course upon the operating table.

Before we recognized and became familiar with hyperthyroidism of this apathetic type, we suffered the unfortunate experience of seeing an occasional unexpected fatality after subtotal thyroidectomy on patients with this condition, in spite of the fact that their course upon the operating table was anything but a disturbing one. Not infrequently patients with apathetic hyperthyroidism will maintain pulse rates upon the operating table during subtotal thyroidectomy of under 120, and without excessive pulse pressure. When these facts are associated in the surgeon's mind with the pre-operative observation that the patient's course pre-operatively has not been an activated one, and his basal metabolism rate has not been high, he is very likely to assume that subtotal thyroidectomy may unhesitatingly and immediately be undertaken with safety. By the same signs and line of reasoning, he is apt to assume, particularly due to the deceptively safe appearing course upon the operating table, that the entire operation can be done safely in one stage. It is in just such cases as this that unexpected fatalities arise. One should look rather to the pre-operative history of the patient and the recognition of the existence of this apathetic type of thyroidism to protect him against too early and too much surgery, rather than those striking danger signals of high pulse rates, high basal rates, high pulse pressure, and recent and excessive activation and intensification of the thyroidism which so characteristically accompany the typical patient with the activated type of hyperthyroidism and warn one of its dangers.

The particular danger signals in the patient with the non-activated type of apathetic thyroidism are marked weight loss, usually gradual and over a long period of time, in contradistinction to the rapid and extreme loss which characterizes activated thyroidism; the existence of the apathetic thyroidism for a long period of time, usually over a year; and an increase in the apathy which characterizes the disease.

We have been so impressed with the possibility of an unexpected fatality in patients with apathetic thyroidism that we have taken the position that the demonstration of the presence of apathetic thyroidism in a patient assumes that some good reason must be advanced why a two-stage operation, right and left thyroidectomy, should not be done. We have assumed the position that all patients with the apathetic type of thyroidism should have right subtotal thyroidectomy, should return home for six weeks, and then return for left subtotal thyroidectomy, with a few exceptions—for the most part patients in whom the disease has not existed for a long time, or there has either been no weight loss or the lost weight has recently been regained. We realize that this will result, in all probability, in some unnecessary two-stage operations, but since apathetic thyroidism carries with it no striking danger signals, but is still capable of serious atypical post-operative thyroid reactions which result fatally, this conservative operative procedure is necessary if we are to overcome the almost trivial operative mortality which still attaches itself to hyperthyroidism, and in our hands is largely related to patients with the apathetic type of thyroidism.